



AW58300HTP-PAIR

USER'S MANUAL

5.8 GHz Outdoor 300 Mbps Ethernet Point-to-Point Radio System

Industrial-grade, long-range wireless Ethernet systems



The AW58300HTA is a radio with dual omnidirectional antennas. It serves as an Access Point (master) in a point-to-multipoint network. The AW58300HTS is a radio with a dual flat panel high gain directional antenna. Multiple AW58300HTS radios can serve as a Subscriber Units (clients) in conjunction with an AW58300HTA.

The AW58300HTP-PAIR includes:

- (2) AW58300HTS Bridge Radios
- (2) Heavy Duty Pole-mount Bracket
- (2) Power Over Ethernet Injector
- (2) 18 VDC Power Supplies

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If you have any questions when configuring your AvaLAN system, the best place to get answers is to visit www.avalanwireless.com. You will also find the latest updates there. If more assistance is needed, send email to support@avalanwireless.com.

To speak to a live technician, please call technical support at the number below during normal business hours.

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Quick Start Guide

Step 1. Radios are Preconfigured out of the Box

Step 2. Mount Radios

Step 3. Align Radios

Step 4. Attach Cables

System Default:

IP Address: 192.168.88.12 (Bridge A Unit)

192.168.88.10 (Bridge B Unit)

Username: admin

Password: password

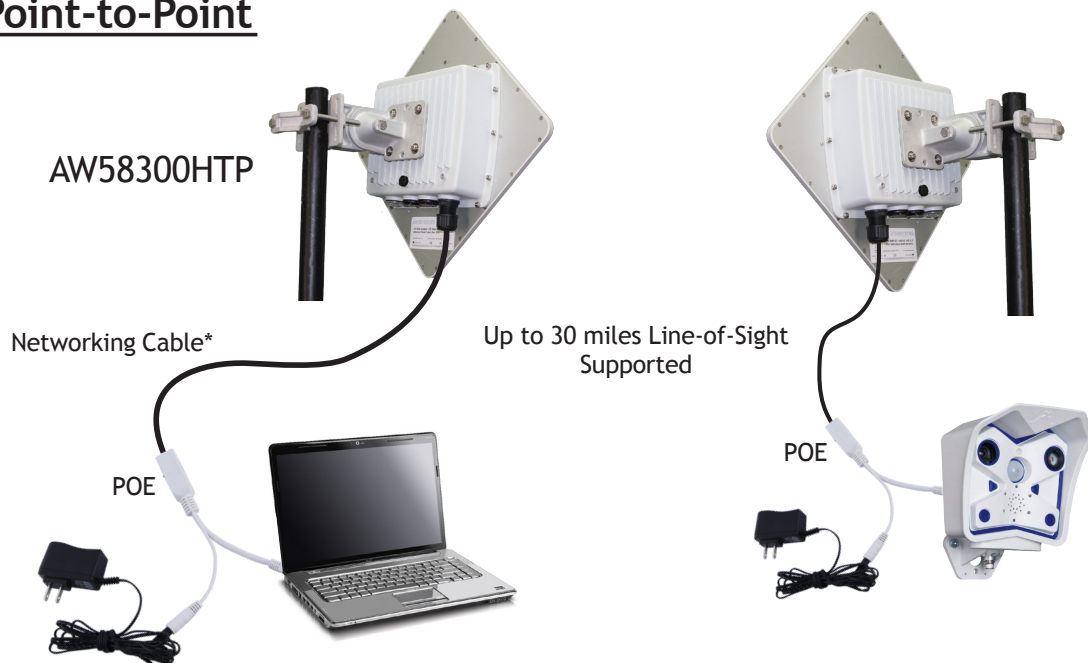
Best Practices:

1. Ensure clear visual path between radios before deployment
2. Test on bench before deployment
3. Networking Cable:
 - CAT 6 Shielded Outdoor Grade
 - For AW58300HTP - maximum length 300 ft/100 meters

Tools Needed:

- ½ inch wrench
- Large Phillips head screwdriver
- Small flat screwdriver

Point-to-Point



*Networking cable not provided

LED Status Information



Bridge A LED Guide

<u>Ethernet</u>	<u>Wireless</u>
● Status	●
● Rx	●
● Tx	●

— The wireless status light blinks slowly when the product is powered and is lit solid when it has a successful wireless connection.

— This light will blink when receiving data

— This light will blink when transmitting data

Bridge B LED Guide

⋈ ●	● Status
⋈ ●	● Wireless
⋈ ●	● Ethernet

— The wireless status light blinks slowly when the product is powered and is lit solid when it has a successful wireless connection.

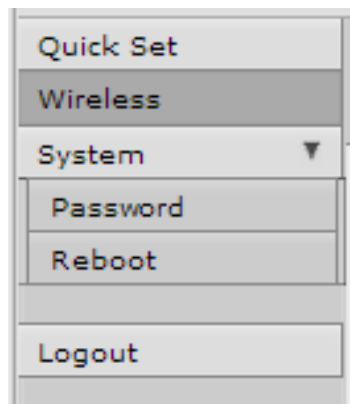
— The wireless activity light blinks when receiving data.

— The Ethernet activity light blinks when receiving data.

Digital Configuration

Connecting to the radio

1. Digital configuration is done by means of the radio's built in browser interface. The unit should be powered on and connected at least temporarily to a network containing a computer that can run a conventional web browser.
2. Using your web browser, connect to the radio as described in the Quick Start Guide found earlier in this manual.
3. The initial page after a successful login is "Quick Set." The content of this page is somewhat different for the AW58300HTP Bridge A and Bridge B.
4. Each page provides a menu on the left to navigate from section to section. The menu looks like this when its sections are expanded:



Beware that certain actions may cause the web page to freeze. In most cases, this is because you are viewing a browser-cached version of the page and not the live one from the radio. Clear your browser cache and/or logout and log back in to recover. You are cautioned not to use the "back" button on your browser to attempt to move back to earlier pages. If you do, you will be logged out and will need to login again.

In the upper right of the page is a label that tells you the version of the web interface. If the version number is not the same as shown below, you might want to visit www.avalanwireless.com (the Downloads page under the Support menu) to see if a newer version of this manual exists before proceeding further.

WebFig v6.7

Changing The Configuration - Step by Step

Please be aware that if you change the IP Address or User Password and forget their new values, you have locked yourself out of the browser interface. The AW58300 runs self-diagnostics at boot-up and will auto-correct most system configuration errors. Prior to calling technical support, it is recommended to power cycle the radio and confirm that the problem remains.

In the event of a lost IP address, reboot the AW58300 to create a temporary IP address of 192.168.88.88 that can be used to access the radio to reset the user-defined IP address. This IP address expires after 3 minutes from reboot. In the event of a lost password, please contact AvaLAN technical support for assistance.

If you are changing parameters over the RF link (we do not recommend this), be sure to make the remote changes first because the link will be broken if the network name or Security Keys do not agree.

The screenshot shows a web interface with two main sections. The top section, titled "Network Settings", contains three input fields: "IP Address" with the value "192.168.168.52/8", "Gateway" with the value "192.168.168.1", and "Device Name" with the value "Subscriber". Below the "IP Address" field, there is a text block that reads: "Use / # after the IP address to specify the Subnet: /8 for 255.0.0.0 /16 for 255.255.0.0 /24 for 255.255.255.0 Example: 192.168.0.10/24". The bottom section, titled "System Configuration", is partially visible and contains the "Device Name" field.

1. Setting the IP Address and Subnet Mask, Gateway and Device Name:

- In the upper right area of the Quick Set page are the data entry boxes for these parameters. They contain the current values.
- A special notation is used for the IP Address and Subnet Mask: Use /x at the end of the IP Address to specify the subnet mask: /8 for 255.0.0.0, /16 for 255.255.0.0 and /24 for 255.255.255.0. Enter a new IP Address and subnet making sure you will be able to browse to the new address with your computer. Also, make sure that the new IP address is unique on your LAN.
- The Gateway address should be specified if it is necessary to communicate with the radio through the Gateway. Your system administrator should have this value.
- The Device Name is an arbitrary string and simply allows you to attach a human-friendly name to this specific radio.
- Click "Apply Configuration" when you have entered new values. Nothing appears to happen, but you have been disconnected and will need to browse to the new IP Address to login again.

2. Setting the User Password:

- On the Main Menu at the left side of the browser window, click “System”, then click “Password.”

Quick Set	
Wireless	
System ▼	
Password	Change Cancel
Reboot	
Logout	
	Old Password <input type="text"/>
	New Password <input type="text"/>
	Confirm Password <input type="text"/>

- Enter the old password and the new password twice in the boxes indicated.
- Click the “Change” button.
- Log out and log back in to test.

3. Setting the Frequency, Network name and Encryption Key:

- To set the Frequency, log in to the Bridge A and on the quick start page a selection can be made.

Network Name ▲	<input type="text" value="AW58300-DEMO"/>
Frequency	<input type="text" value="5825"/> ▼ MHz

- The Network name is an arbitrary character string that must be set alike in all linked radios.
- The Encryption Key is also an arbitrary character string that is used to generate the 128 bit key.

	Wireless
Network Name ▲	<input type="text" value="AW58300-DEMO"/>
Encryption Key	<input type="text" value="....."/>

Viewing Status Information

After configuring your AvalAN radios and establishing links among them, you can use the browser interface to view status and troubleshooting Information. The initial “Quick Set” page will show whether the wireless link is operating and the current signal strength. For more comprehensive information, choose “Wireless” from the Main Menu at the left side of the window. The “Wireless” page leads to most of the useful status information.

Subscriber - Wireless Tabl x

192.168.168.52/webfig/#Wireless

WebFig v6.7
Wireless Tables

Quick Set

Wireless

System ▶

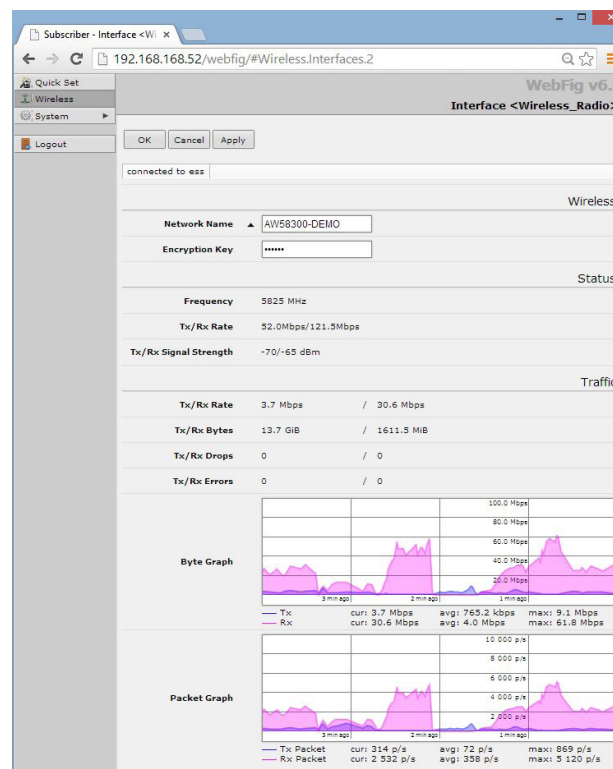
Logout

Scanner

1 item

		▲ Name	Type	L2 MTU	Tx	Rx	Tx Packet (p/s)	Rx Packet (p/s)	MAC Address	ARP	Mode	Band	Chan... Width	Freq... (MHz)	SSID
D	RS	Wireless_Radio	Wireless	2290	734.3 kbps	31.3 kbps	64	39	00:0C:42	enabled	station	5GHz-on	20/40MH	5180	AW58300-DEMO

The table on the Interfaces tab provides a list of the interface processes running in this radio. If it is Bridge B, there will be only one, “Wireless_Radio.” If it is Bridge A, there will also be a WDS process running. These rows summarize the configuration details and current running status of the radio.



Physical Setup

1. Mount each unit securely using the mounting brackets provided or other means as necessary. Maximize lightning resistance by providing a strong DC ground connection to the metal housing.
2. The AW58300 units have dual directional flat panel antennas. It is important that the AW58300 antennas be pointed toward each other. Care should be taken to align the panel antenna to provide the best performance. The antenna performs best when the panel's face is aligned toward its partner.
3. Power is provided to the units by means of their Ethernet cables, allowing the power supplies to be located at convenient locations. The included power-over-Ethernet injectors (POE) provide the means for adding DC power to unused wires in the cable. Each radio is provided with a cable clamping device that allows an RJ45 plug on the cable to pass through and can be tightened down around the cable to provide a weatherproof seal.



Troubleshooting:

Power:

- Check that the POE cabling matches illustration
- Check network connection on your switch and verify all RJ45 cables are plugged in properly
- Only use the POE injector supplied
- Ensure the 110VAC is providing clean and consistent AC power to the 18VDC power supply

Signal Quality:

- Ensure line of sight (LOS)
- Check signal strength in web interface (-40dB is excellent strength and -80dB is weak)

Web Interface:

- Plug RJ45 male side of POE directly in to computer and verify network status shows connected
- Verify the local computer's network settings are in the same IP subnet range as the radio

Technical specifications

CHARACTERISTIC	SPECIFICATION/DESCRIPTION
RF transmission rate	300 Mbps
Ethernet data rate	Up to 180 Mbps
Output power AW58300HTP	200 watts EIRP with 23 dBi directional antenna
Receiver Sensitivity	-115 dBm
Frequency Range	5.725 - 5.850 GHz
Channel Bandwidth	40 MHz
RF channels	2 Non-Overlapping with 40 MHz Channel Bandwidth
Modulation	OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
Range	Line-of-sight range up to 30 miles
Browser Management Tools	QoS Statistics, Network Settings, Channel Selection
Data Security	AES 128-bit Encryption
Operating Environment	-40°C to +70°C, sealed for outdoor operation: die cast aluminum package with rubber gasket seals
Mounting	Heavy Duty Pole-Mount Bracket included
Connector	10/100/1000 Ethernet RJ-45 with weatherproof sealing gland
Power System	Power Over Ethernet 18 VDC Injectors included: 100-240 VAC 50/60Hz primary source
AW58300HTP Antenna	Integrated 23 dBi flat panel, 13" square, 10° Beamwidth
AW58300HTP Size	13" by 13" by 3.25", not including pole-mount bracket, weight 7 lbs
Warranty	1 Year Parts & Labor, XTRa-Care extended warranty available
Certification	FCC, IC

Frequency Channels

Frequency MHz	Non-overlapping 40 MHz Bandwidth
5745	
5750	
5755	
5760	
5765	X
5770	
5775	
5780	
5785	
5790	
5795	
5800	
5805	Default
5810	
5815	
5820	
5825	

Limited Warranty

This product is warranted to the original purchaser for normal use for a period of 360 days from the date of purchase. If a defect covered under this warranty occurs, AvaLAN will repair or replace the defective part, at its option, at no cost. This warranty does not cover defects resulting from misuse or modification of the product.

If you wish, you may purchase extended warranty for this product. AvaLAN's XTRa-Care Extended Warranty provides a two-year extension plus free overnight (Continental USA only) product replacement. Visit our website for more details.

Regulatory Compliance

Compliance Statement (Part 15.19)

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Warning (Part 15.21)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure (OET Bulletin 65)

To comply with FCC RF exposure requirements for mobile transmitting devices, this transmitter should only be used or installed at locations where there is at least 20cm separation distance between the antenna and all persons.

Information to the User - Part 15.105 (b)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.